



PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE HONORABLE BOARD OF PATENT APPEALS AND INTERFERENCES

In re the Application of

Arie Hendrik Frans VAN VLIET et al.

Group Art Unit: 1733

Application No.: 09/352,612

Examiner: T. Kilkenny

Filed: July 13, 1999

Docket No.: 102222.01

For: GRID COMPRISING POLYMERIC, DRAWN STRIPS AND A PROCESS FOR
MAKING SAME

REPLY BRIEF

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

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Sir:

The following remarks are directed to the new points of argument raised in the
Examiner's Answer dated December 4, 2003.

Claims 1-5, 7 and 13-19 are rejected under 35 U.S.C. §103(a) as being unpatentable
over Canadian Patent Publication No. CA 2,162,686 to Van Vliet et al. (hereinafter "Van
Vliet") in view of U.S. Patent No. 4,483,438 to Kobiella, U.S. Patent No. 4,265,954 to
Romanek and Canadian Patent Publication No. CA 1,026,522 to Saito. Claims 6 and 19-23
are rejected under 35 U.S.C. §103(a) as being unpatentable over Van Vliet in view of
Kobiella, Romanek and Saito as applied to claim 1, and further in view of French Patent
Publication No. 1,506,163 to Hoechst and U.S. Patent No. 3,560,291 to Foglia et al.
(hereinafter "Foglia").

Applicants appreciate the acknowledgement of Applicants' arguments leading to the statement that "The examiner rescinds the position that the spaced absorption particles would define spatially separated bonding points within the zone of overlap" (Examiner's Answer at page 11). As such, the Patent Office reverts back to its previous position and admits that Van Vliet fails to teach this feature.

Accordingly, based on the statement "the rejection as set forth in the final rejection directed to rendering obvious spatially separated bonding in Van Vliet et al. by the secondary reference to Kobiella is still maintained, as it was never withdrawn" (Examiner's Answer at page 11), the Patent Office relies on the combination of Van Vliet in view of Kobiella for this feature. In response, Applicants respectfully submit the following.

Van Vliet teaches welding a strip to itself by its end wherein this single-strip-welding is performed over the entire zone of overlap (page 3, lines 4-21). Further, Van Vliet teaches that this bonding technique, i.e., bonding the entire zone of overlap, can be used to form a mat from crossed strips, i.e., a grid (page 3, lines 23-30). Applicants respectfully submit, therefore, that Van Vliet teaches welding by the entire zone of overlap of the strip or of the strips respectively in single-strip-welding, as well as in welding crossed strips to form a grid.

Kobiella teaches only single-strip-welding via spatially separated bonding lines in the zone of overlap of the strip with itself. Applicants respectfully submit that what one skilled in the art can learn from Van Vliet in view of Kobiella is that in order to form a two-dimensional grid, the crossed strips must be welded across their entire zone of overlap (per Van Vliet), whereas in single-strip-welding one can bind the ends of the strips via the entire surface of the zone of overlap or via spatially separated bonding lines in the zone of overlap (per Van Vliet and Kobiella). This is because Kobiella has no teaching of use for a two-dimensional grid or appreciation of problems faced by such a grid so one would not have been motivated to rely on its teachings for such a use.

The Examiner's Answer at page 6 states "it would have been obvious to one of ordinary skill in the art at the time of the invention to group the absorption particles of Van Vliet et al. in at least two spatially separated bonding lines to further the degree at which regions in the zone of overlap remain free of disorientation and therefore increase the degree to which the strength of the strips is maintained in the zone of overlap as is a benefit of spatially bonding as disclosed by Kobiella" (emphasis added).

Applicants respectfully submit that any such grouping of the absorption particles is not suggested in Kobiella nor in the subject matter of claims 1-5, 7 and 13-19. Further, Applicants respectfully submit that such a grouping is a mere speculation, and that not even application of an impermissible hindsight view could lead to such grouping of the absorption particles. Applicants respectfully submit that to make evident that the claimed grid is obvious from the combination of Van Vliet and Kobiella at the time the invention was made, such a combination of applied references had to give one skilled in the art a reasonable expectation of success in solving the problem of early rupture (or at least some other problem faced by grids). This is simply not the case, as Applicants argue in detail in their Brief on Appeal at page 17.

Applicants respectfully submit that in addition to the mere speculation characteristic in finding the feature regarding the grouping of absorption particles that simply does not exist, as detailed above, the Examiner's Answer mischaracterizes the teaching of Kobiella. Specifically, the Examiner's Answer states that Kobiella "provides motivation for the spatially separated bonding as required, wherein said spatially separated bonding lines act to maintain the strength of the strip at the zone of overlap, which act to maintain the strength of the entire grid" (Examiner's Answer at page 14, emphasis added). Further, the Examiner's Answer at page 13 seems to suggest not only that these strap strengths in the grids could be maintained, but perhaps even increased from their original strengths, in that it states "Kobiella discloses at

least 75%, which would appear to suggest 75% and higher, with no upper limit provided" (emphasis added).

Applicants respectfully submit that Kobiella clearly states "the inventor of the present invention has determined that the above-described joint configuration with spaced-apart fused regions 30 results in acceptable strength welds of the oriented thin-film strap without sacrificing an unacceptable amount of strap strength at the weld" (col. 3, line 67 - col. 4, line 4, emphasis added). This clearly teaches to one of ordinary skill that the bond is not strong, but rather marginally acceptable. Applicants respectfully submit that based on this disclosure the application of Kobiella as a reference fails to meet the standard that one skilled in the art who has to solve a technical problem needs a reasonable expectation for success when he decides himself on a special solution to that technical problem.

In other words, where one has to solve the problem of early rupture and must base a reasonable expectation of success on hard figures and on the actuality of occurrence of those figures, the teaching of Kobiella cannot be read to assure this reasonable expectation of success. When one skilled in the art reads Kobiella and considers whether to transfer the teaching of the single-strip-welding disclosed in that patent to the welding of cross strips in grid-formation, such individual would recognize that:

a. according to Kobiella, bonding of the zone of overlap of the single strip via spatially separated bonding lines yields as a hard value "at least about 75% of the strap strength" (col. 6, line 11), and therefore one skilled in the art would rely on no greater potential value than "at least about 75%" of the strap strength;

b. experimentation would prove that a grid constructed using the process disclosed in Van Vliet, welding of crossed strips by the entire zone of overlap of the strips, would yield as a hard value about 85% retention of the strength of the strips in a grid

(Applicants' Specification at page 6, lines 8-27, and Brief on Appeal at page 19) which is more already than that taught to be attainable in Kobiella;

c. despite 10 years of research and development between Kobiella (issued in 1984) and Van Vliet (issued in 1994), the latter teaches binding both crossed strips of a grid and a single strip for packaging via the corresponding entire zone of overlap; and

d. consequently there is no reasonable expectation that Kobiella's "at least about 75%" would lead to a strength retention significantly larger than about 75% of its original value in single-strip-welding, or moreover, in the welding of crossed strips to form a grid.

Applicants therefore respectfully assert that whatever decision one skilled in the art would have made to solve the problem of early rupture, there was no motivation to combine the teachings of Van Vliet and Kobiella to achieve a reasonable expectation of success in solving that problem.

In the Conclusion in the Examiner's Answer, it is admitted that Van Vliet teaches fusing over the entire zone of overlap, failing to disclose at least two spatially separated bonding lines or bonding points (emphasis added). Applicants respectfully submit that an error in the Conclusion arises where it states that "Kobiella teaches spatially separated bonding lines, wherein said spatially separated bonding lines are an improvement over fusing over the entire region as the separated bonding lines increase the strength of the strip(s) at the zone of overlap by retaining a sufficient amount of tensile strength with the strip(s)." Applicants respectfully submit that, while accurately quoted, this language from Kobiella taken out of context, as it has been, leads to an inaccurate reading of the teaching of Kobiella.

Kobiella is specifically directed to a strap that is considerably wider than a conventional strap (e.g., two to eight times as wide) and that is considerably thinner (e.g., 0.08 mm) (col. 1, lines 60-64). More specifically, Kobiella is directed to overcoming difficulties occurring in attempting to melt the entire surface areas of the overlapping wider

and thinner strap portions in the selected joint region (col. 2, lines 6-33). Kobiella recognizes that attempts to produce a conventional weld in such a thin-film, wider strap reduced weld strength in the joined area to an unacceptable level. As such, Kobiella teaches that, for this specific use, "said spatially separated bonding lines are an improvement over fusing over the entire region" and still in context "the separated bonding lines increase the strength of the strip(s) at the zone of the overlap." This does not imply, as does the Examiner's Conclusion, that there is an overall increase of the strength at the bond when compared to the strap itself. Rather, this implies, when read in light of Kobiella's entire disclosure, that there is an overall increase in strength over previous unacceptable results obtained in attempting to employ the process that was conventional in the art (as of 1984) to this unconventional use. In fact, the only objective that was sought in Kobiella was to "retain a sufficient amount of tensile strength at the formation of the joint to enable the strap to properly function (col. 2, lines 37-39, emphasis added). Thus, this problem of thin-film damage and welding is not present in Van Vliet.

Applicants respectfully submit that given the specificity in the application of the method in Kobiella to the special circumstance of the unconventional thin-film single strap to which the bonding method described therein was applied, and the disclosure that the objective was to retain a minimally sufficient amount of tensile strength to assure nothing more than proper functioning of that unconventional strap in a tension loop, there was no motivation to combine Kobiella with Van Vliet, which is admitted as failing to disclose the features recited in the subject matter of claims 1-7 and 9-23, in order to solve the problem of early rupture. In fact, the record establishes that one of ordinary skill would recognize to the contrary that the Van Vliet bonding method shows superior strength to Kobiella. Thus, the Examiner's Conclusion and reason for motivation to combine is erroneous. Rather, to the contrary, when

read in context, Kobiella leads to a conclusion significantly different from that which the Examiner's Answer propounds.

Further, Applicants respectfully submit that both Romanek and Saito teach bonding the strips of the grid via the entire zone of overlap. Thus, these applied references fail to overcome the deficiencies of Kobiella and when read as a whole teach away from the invention. Additionally, Applicants respectfully submit that none of the applied references, including Hoechst or Foglia, suggests forming spatially separated bonding lines or bonding points on the zone of overlap of crossed straps. As such, the mere possibility of forming such bonding points or lines with a laser cannot give one skilled in the art a reasonable expectation of success in solving the problem of early rupture.

The Examiner's Answer concludes "no further evidence beyond Appellants' own arguments has been presented to suggest this (recognition of the problem of early rupture) would be an unexpected result" from the combination of the applied references. Applicants respectfully submit that this conclusion inappropriately shifts the burden to the Applicants. The foregoing discussion clearly demonstrates that no further evidence beyond the weak connection of limitedly related references has been presented by the Patent Office to suggest that this (recognition of the problem of early rupture) would be an expected result.

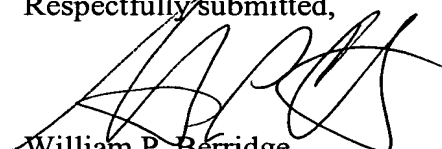
Clearly, there is no support for the speculative and/or factually flawed conclusion that the use of spatially separated bonding lines, as provided by Kobiella, in the teaching of Van Vliet would render any of Applicants' claims prima facie obvious. One looking to, for example, Kobiella col. 3, line 67 to col. 4, line 4, would readily appreciate that even Kobiella recognizes its bond sacrifices strap strength of the weld. Thus, one would have expected poorer performance than would be achieved in the use of entire surface overlap bonding as in Van Vliet. This is confirmed by the hard evidence of bond strength outlined earlier in this Brief. One faced with a grid having early rupture would not have been led to the use of a

welding process admittedly weak, but necessary for its particular limited application to a wider and thinner single strip. The Patent Office thus fails to meet its burden to establish a prima facie case of obviousness since the alleged motivation to combine is factually flawed and inconsistent with the combined teachings when read as a whole. Accordingly, independent claims 1 and 16 and claims dependent therefrom define over the asserted art.

Applicants respectfully reassert their argument that claims 9-12 should be rejoined for the reasons stated in Applicants' Brief on Appeal at pages 20-21. Claims 9-12 are allowable at least for their dependence in allowable base claim 1.

Based on the foregoing, Applicants respectfully submit that claims 1-7 and 9-23 contain allowable subject matter. Favorable consideration of the arguments made above in support of allowance of claims 1-7 and 9-23 is earnestly solicited.

Respectfully submitted,



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